Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled)

2. (Currently Amended) The method of claim 31 [[1]], further comprising the computer generating one or more data sets associated with one or more parameters of a plurality of appliances having geometries selected to progressively reposition the teeth, wherein the appliances comprise polymeric shells having cavities and wherein the cavities of successive shells have different geometries shaped to receive and resiliently reposition teeth from one arrangement to a successive arrangement.

3. (Previously Presented) The method of claim 2, wherein the plurality of appliances includes a sequence of configurations of braces, the braces including brackets and archwires.

4. (Currently Amended) The method of claim 2, wherein the plurality of appliances includes a sequence of polymeric shells manufactured by fitting polymeric sheets over positive models corresponding to the teeth of the new patient.

5. (Previously Presented) The method of claim 2, wherein the plurality of appliances includes a sequence of polymeric shells manufactured from digital models.

6. (Currently Amended) The method of claim 37 [[1]], wherein the similarity

between the value of at least one of the number of parameters for the particular cluster and the corresponding value of the at least one parameter for the new patient ~~output data stream~~ is related to one or more clinical constraints.

7. (Previously Presented) The method of claim 6, wherein the one or more clinical constraints includes one or more of a maximum rate of displacement of a tooth, a maximum force on a tooth, a desired end position of a tooth, or one or more combinations thereof.

8. (Original) The method of claim 7, wherein the maximum force is a linear force or a torsional force.

9. (Previously Presented) The method of claim 7, wherein the maximum rate of displacement is a linear or an angular rate of displacement.

10.-12. (Canceled)

13. (Previously Presented) The method of claim 2, wherein one of the plurality of appliances is a positioner for finishing and maintaining teeth positions.

14. (Currently Amended) The method of claim 2, further comprising:

the computer comparing an actual effect of the plurality of appliances with an intended effect of the plurality of appliances; and

the computer identifying one of the plurality of appliances as an unsatisfactory appliance if the actual effect of one of the plurality of the appliances is more than a threshold different from the intended effect of the plurality of appliances.

15. (Currently Amended) The method of claim 31 [[1]], further comprising the

computer capturing at least an initial tooth position, a target tooth position; and one or more intermediate tooth positions.

16. (Currently Amended) The method of claim 31 [[1]], further comprising the computer analyzing one of a plurality of intermediate tooth positions with a target position.

17. (Currently Amended) The method of claim 31 [[1]], further comprising the computer capturing one or more characteristics data tags associated with a patient case to label captured data.

18. (Currently Amended) The method of claim 17, further comprising the computer aggregating data of a set of treatments based on the data tags and rating at least one of a plurality of the set of treatments based on the aggregated data.

19. (Currently Amended) The method of claim 18, further comprising the computer comparing performance of a plurality of sets of treatments.

20. (Currently Amended) The method of claim 31 [[1]], further comprising the computer applying a predetermined treatment model to calculate risk of treatment complication.

21. (Canceled)

22. (Currently Amended) The method of claim 20, further comprising the computer identifying a treatment case for special treatment parameters including clinical constraint.

23. (Currently Amended) The method of claim 20, further comprising the

computer clusterizing a plurality of clinical practitioners based on one or more practice habits.

24. (Original) The method of claim 23, wherein treatment parameters are adapted to preferences specific to each cluster.

25. (Currently Amended) The method of claim 31 [[1]], further comprising the computer applying a probabilistic model to ~~determine~~ detect one or more discrepancies between a target and an actual tooth position at one or more stages in the treatment.

26. (Canceled)

27. (Currently Amended) The method of claim 31 [[26]], wherein [[the]] clustering ~~operation~~ is iteratively performed, and each iteration of [[the]] clustering ~~operation~~ includes updating the detected one or more patterns.

28. (Currently Amended) The method of claim 36 [[26]], wherein ~~performing the~~ clustering ~~operation~~ includes iteratively detecting the one or more patterns and updating the ~~associated predefined~~ modeled risk ~~parameter~~ based on each iteratively detected one or more patterns.

29. (Currently Amended) An apparatus, comprising:

one or more processors;

a database including stored information related to a plurality of patient treatment histories, each including:

an initial data set representing teeth of each dental patient prior to treatment;

an intended dental treatment outcome data set for each dental patient; and

an actual dental treatment outcome data set for each dental patient; and

a memory for storing instructions which, when executed by the one or more processors, causes the one or more processors to:

access information from [[a]] the database; ~~including stored information related to one or more of a patient treatment history, an orthodontic therapy, orthodontic information, diagnostics, or orthodontic treatment outcome based at least in part on a received current malocclusion condition of a patient, to~~

perform a clustering operation on the accessed information from the database; [[to]]

model discrepancies between the intended dental treatment outcome data sets and the actual dental treatment outcome data sets;

correlate the modeled discrepancies to one or more clinicians who performed dental treatments within each cluster; and

detect one or more patterns in the accessed information, the one or more patterns associated with one or more different treatment outcomes achieved by different clinicians based on the correlated modeled discrepancies ~~or a predetermined level of treatment complication, to associate a predefined risk parameter to each detected one or more patterns based on the clustering operation, and to generate orthodontic related treatment information for the current malocclusion condition of the patient~~.

30. (Currently Amended) The apparatus of claim[[s]] 29 including a display device operatively coupled to the one or more processors, wherein the memory for storing instructions, which, when executed by the one or more processors, causes the one or more processors to display the ~~generated orthodontic related treatment~~ accessed information on the display device.

31. (New) A computer implemented method, comprising:

storing in a database data related to each a plurality of dental patient treatment histories, each including:

an initial data set representing teeth of each dental patient prior to treatment;

an intended dental treatment outcome data set for each dental patient; and

an actual dental treatment outcome data set for each dental patient;

a computer clustering the data into clusters based on at least one of a number of parameters including initial dental condition diagnoses, dental treatment parameters, intended dental treatment outcomes, actual dental treatment outcomes, and patient demographics;

the computer modeling discrepancies between the intended dental treatment outcome data sets and the actual dental treatment outcome data sets within each cluster;

the computer correlating the modeled discrepancies to one or more clinicians who performed dental treatments within each cluster; and

the computer detecting one or more patterns of different treatment outcomes achieved by different clinicians based on the correlated modeled discrepancies.

32. (New) The method of claim 31, were the method includes the computer setting a flag for feedback to a particular clinician who achieved worse treatment outcomes relative to other correlated clinicians within a particular one of the clusters.

33. (New) The method of claim 31, were the method includes the computer setting a flag for solicitation of treatment differences by a particular clinician who

achieved better treatment outcomes relative to other correlated clinicians within a particular one of the clusters.

34. (New) The method of claim 31, where the method includes the computer detecting differences in treatment preferences of the one or more clinicians by statistical observation of associated treatment histories.

35. (New) The method of claim 34, where clustering data includes the computer clustering based on one or more parameters relating to the one or more clinicians including geographical location, training variables, size of practice, and nature of practice.

36. (New) The method of claim 31, where the method includes the computer modeling risk for undesirable dental treatment outcomes within each cluster based at least in part on the modeled discrepancies within each cluster.

37. (New) The method of claim 36, where the method includes the computer:

assigning a new patient to a particular cluster prior to treatment based at least in part on a similarity between a value of at least one of the number of parameters for the particular cluster and a corresponding value of the at least one parameter for the new patient; and

predicting a dental treatment outcome for the new patient based at least in part on the modeled risk and modeled discrepancies within each cluster.

38. (New) The method of claim 37, where the method includes the computer providing a dental treatment plan for the new patient to reach a particular intended dental treatment outcome based at least in part on the particular cluster and the modeled discrepancies for the particular cluster.

39. (New) The method of claim 38, where the computer providing the dental treatment plan includes one or more of providing a dental appliance design, providing a dental appliance manufacturing protocol, and providing a treatment approach for dental appliance usage.